6.0 SHORT-TERM WORK PLAN

Preservation is the primary compensation technique proposed at this mitigation area, therefore, limited construction is required to execute this plan. Construction activities will be restricted to the areas proposed for restoration to remove fill material and water conveyance structures associated with access roads located within existing wetlands and streams. Construction will include excavating to remove fill and fine grading to match adjacent wetlands elevations. A minimum of 6 inches of topsoil will be used to top-dress graded areas where necessary, unless fill removal exposes native topsoil. During construction, final topsoil grades will include subtle elevation variability and irregularity to promote vegetative re-growth diversity.

The following 13 action items at the locations provided on Figure 4-6 are proposed as part of this mitigation plan to improve habitat:

- Preserve approximately 294.24 acres of high quality wetland habitat.
- Preserve approximately 213.5 acres of high quality upland forest buffer habitat.
- Preserve approximately 4,794 linear feet of Menominee River riparian shoreline.
- Preserve approximately 7,864 linear feet of stream habitat.
- Restore wetland by removing approximately 1 acre of access roads within wetlands.
- Restore wetland by removing at least 2 debris/tire piles.
- Abandon approximately 17,036 linear feet (5.9 acres) of access roads within uplands.
- Restore uplands and wetland by removing 17 deer stand structures.
- Restore segments of stream channels by removal of two deteriorated culverts and one bridge located within floodplain to improve safety, habitat connectivity, and stream flow.
- Restore approximately 175 linear feet of stream channel by removal of six culvert locations within access roads to improve habitat connectivity and stream flow.
- Enhance wetland and upland habitats by controlling invasive plant species including scattered giant reed grass (4 areas), reed canary grass (4 areas), spotted knapweed (8 areas) and marsh thistle (3 areas). If possible, coordinate with landowner to the north to treat giant reed grass and reed canary populations immediately adjacent to the northern property line.
- Complete a property survey to locate mitigation area limits. Notify adjacent landowners about conservation easement and restoration components of the mitigation plan.
- Install signage to discourage trespassers and limit uncontrolled access.

Hydrology Plan

Wetland hydrology on the mitigation site is primarily seasonal groundwater and surface water contributions. Removal of the road fill material will restore these areas to predevelopment elevations and improve the hydrologic regime, with the goal that these areas support emergent, shrub-scrub, and forested wetland plant communities similar to conditions present in the adjacent wetlands. Fill materials will be removed to expose the original native wetland soils surface, if possible, or to approximately match the elevation of the adjacent wetland communities. Placement of topsoil may be required if excavation to the desired elevations results in exposed fill materials or subsoil. Micro-topography conditions are proposed during construction at random locations to create microhabitats within the target hydrologic regime. The removed fill materials will be disposed in designated upland areas.

Stream Mitigation Plan

Concurrent with road removal, man-made alternations to the streams (eight culverts, one bridge, and associated road fill) will be removed at the locations shown on Figure 4-6. The stream channels at the removal locations, and the upstream and downstream reaches directly impacted by the culverts, will be restored to appropriate elevations and dimensions according to geomorphic surveys, with the intent to adequately convey flow, enable aquatic organism passage, and provide instream aquatic habitat. A schematic detail is provided in Appendix A.

Construction will occur during periods of low flow. Best management practices will be used to reduce erosion during construction. Interim measures to prevent soil erosion during construction may include the installation of sedimentation barriers and temporary mulching. Temporary stream diversion (daily bypass pumping) may be utilized as needed to prevent concentrated flow through the work area. All areas affected by construction shall be mulched or blanketed, as appropriate, and seeded as soon after construction as possible.

Wetland and Riparian Vegetation Establishment Plan

The planting plan proposed for restoration areas within the mitigation area has been developed to incorporate species similar in composition to the adjacent wetland communities which are primarily forested, shrub, and emergent wetland types. Species selected will replace diversity and functional value of the restored wetland community. The forested and shrub vegetation communities at this site will require less frequent periods of inundation and will be better suited to a periodically saturated hydrologic regime. The emergent community is associated with saturated soils and will spread to water depths of up to 6 inches.

Following construction, the wetland and riparian areas will be seeded with a temporary cover crop and a wetland seed mixture that can accommodate both sun and shade. The temporary cover crop will be selected based on installation timing and local hydrology, with consideration given to annual rye. The wetland mix is designed for linear projects and will provide rapid establishment of natives in the restoration areas until species from the adjacent communities can colonize the areas. The forested and shrub wetland areas will be planted with five native wetland tree species and six native shrub species at a density of 400 individuals per acre each. Native genotypes found in the local area will be used for seeding and planting. No state or federally protected, non-native, exotic, or hybrid nursery species will be utilized. Proposed plant species and seeding rates proposed for restored wetland areas are presented in Appendix I.

Wildlife Habitat Creation Plan

Six wildlife habitat structures per acre will be placed in the wetland restoration areas and upland road removal areas after grading is completed. Habitat structures will include tree stumps, logs or whole trees laid horizontally, with at least 50 percent of each structure extending above the normal water level. Habitat structures will be placed across the linear areas to deter motor vehicle traffic where appropriate. Vertical structures are not proposed, due to the close proximity of the existing forest.

Wildlife habitat creation in the stream channels will be restricted to limbs and large rocks to encourage macroinvertebrate colonization. Large woody debris will not be installed in stream channels.

Mitigation Schedule and Sequence

Preservation and restoration activities proposed for the mitigation area will occur prior to or concurrent with construction of permitted activities on the Project area. Land preservation and construction of the mitigation area is dependent on permit approvals. The anticipated work plan execution sequence includes:

1. Obtain plan approval and applicable permits from MDEQ.
2. Remove debris pile and deer stands; commence treatments of invasive species.
3. Install erosion control measures per the erosion control plan prior to earthwork.
4. Remove fill material per plan.
5. Remove culverts and bridge per plan; grade to achieve appropriate channel and bank elevations; install any grade control structures.
6. Conduct minor grading to achieve contours appropriate to wetland restoration and stream channel restoration and to create microhabitats as directed by field ecologist.
7. Install wildlife habitat structures.
8. Install a temporary cover crop over disturbed soils following final grading per plan.
9. Install native seed mix during the dormant fall season or during the spring seeding window following adequate invasive species control and following site earthwork per plan.
10. Install native shrubs and trees within the shrub and wooded wetland plant communities.
11. Remove temporary erosion control measures once the vegetation has been established to a minimum of 70% cover.
12. Implement management and monitoring activities.
13. Submit as-built plans and specifications signed and sealed by a registered surveyor or licensed engineer.
14. Submit annual monitoring and management reports and document compliance with performance standards.
15. Submit written statement that the mitigation is complete and request for final approval.
16. Execute long-term management plan with land steward.

7.0 SHORT-TERM MANAGEMENT PLAN

Following construction, the mitigation area will be maintained and managed during the 5-year monitoring period by a qualified professional contracted by Aquila. Initial management activities include:

- Initiation of communication and establishment of working relationship with surrounding landowners and local government, including education of intent of mitigation plan.
- Installation of conservation easement signs on the perimeter of the mitigation area, explaining recreational usage limitations and including the following language:

WETLAND CONSERVATION EASEMENT AREA

NO CONSTRUCTION OR PLACEMENT OF STRUCTURES ALLOWED

NO MOWING, CUTTING, FILLING, DREDGING, OR APPLICATION OF CHEMICALS ALLOWED

NO MOTOR VEHICLES, FOOT TRAVEL ONLY

PLEASE CLEAN SHOES PRIOR ENTRY TO HELP CONTROL THE INTRODUCTION OF INVASIVE PLANTS

- Evaluation of potential threats to the mitigation area and preparation of a work plan to reduce or eliminate identified threats. Potential threats include motor vehicle use (including ORVs), unauthorized logging, and invasive species introductions.

An adaptive management plan will be implemented during the 5-year monitoring period, based on data from yearly meander surveys and site observations. Due to the high quality of the habitats on the mitigation area and the paucity of invasive species and other disturbances, few management activities are anticipated. Based on current site information, the following annual management activities are anticipated:

- Establish and maintain permanent photo stations for monitoring.
- Monitor and manage restored wetland and upland habitats for invasive plants.
- Monitor and manage restored stream channels until stabilized with vegetation.
- Monitor and manage giant reed grass, reed canary grass, and spotted knapweed treatment areas on and immediately adjacent to the Site.
- Remove other problematic invasive plant species.
- Maintain contact with surrounding landowners and local government.
- Maintain signage to limit trespassers and use of former access roads.

Findings and maintenance activities will be included in annual monitoring reports.